

## Safety Data Sheet acc. to OSHA HCS

Printing date 03/09/2021

Reviewed on 03/09/2021

### 1 Identification

- **Product identifier**
- **Trade name:** 4,4'-Azo-bis(4-cyanovaleric Acid)
- **Article number:** 150412
- **CAS Number:**  
2638-94-0
- **EC number:**  
220-135-0
- **Molecular Formula** C12 H16 N4 O4
- **Molecular Weight** 280.28
- **Application of the substance / the mixture** For Research or Further Manufacturing Use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
MP Biomedicals, LLC  
29525 Fountain Parkway  
Solon, OH 44139  
United States  
www.mpbio.com
- **Information department:** Quality Control Department
- **Emergency telephone number:** CHEMTREC: 1-800-424-9300 (1-703-527-3887)

### 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02 GHS07

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
4,4'-Azo-bis(4-cyanovaleric Acid)
- **Hazard statements**  
Flammable solid.  
Harmful if swallowed.

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· **Precautionary statements**

- Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- Ground/bond container and receiving equipment.
- Use explosion-proof electrical/ventilating/lighting/equipment.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Wear protective gloves/protective clothing/eye protection/face protection.
- If swallowed: Call a poison center/doctor if you feel unwell.
- Rinse mouth.
- In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.
- Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	2	Reactivity = 2

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
2638-94-0 4,4'-Azo-bis(4-cyanovaleric Acid)
- **Identification number(s)**
- **EC number:** 220-135-0

### 4 First-aid measures

· **Description of first aid measures**

- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Flush eyes with running water as a precaution.
- **After swallowing:**  
Never give anything by mouth to an unconscious person. Rinse mouth with water. If symptoms persist consult a Doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

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### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically, dispose contaminated material as waste according to Section 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

Substance is not listed.

- **PAC-2:**

Substance is not listed.

- **PAC-3:**

Substance is not listed.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling**  
Avoid direct contact with skin. Use protective clothing including gloves, lab coat, face/eye protection.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** 2-8°C
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Further information about storage conditions:** Protect from exposure to light.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see Section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Not required.

## 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

<b>Form:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Indeterminate
<b>Odor threshold:</b>	Not determined.

· **pH-value:** Not applicable.

#### · Change in condition

**Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Not determined.

#### · Explosion limits:

<b>Lower:</b>	Not Applicable
<b>Upper:</b>	Not Applicable

· **Vapor pressure:** Not applicable.

· **Density:** Not Applicable  
· **Relative density:** Not determined.

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· Vapor density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with	Not Determined
· Water:	Not determined. Insoluble.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
VOC content:	0.00 %
Solids content:	100.0 %
· Other information	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**  
No further relevant information available.  
Avoid contact with acids. Contact liberates a toxic gas.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

### · Information on toxicological effects

#### · Acute toxicity:

#### · LD/LC50 values that are relevant for classification:

ATE (Acute Toxicity Estimate)

Oral	LD50	2,000 mg/kg (rat)
------	------	-------------------

2638-94-0 4,4'-Azo-bis(4-cyanovaleric Acid)

Oral	LD50	2,000 mg/kg (rat)
------	------	-------------------

#### · Primary irritant effect:

- **on the skin:** No irritant effect.
- **on the eye:** Irritant and potentially harmful
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

#### · Carcinogenic categories

#### · IARC (International Agency for Research on Cancer)

Substance is not listed.

#### · NTP (National Toxicology Program)

Substance is not listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Can not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Discard must be made according to official regulations.

## 14 Transport information

- |                                  |  |
|----------------------------------|--|
| · <b>UN-Number</b>               | UN1325   |
| · <b>DOT, ADR, IMDG, IATA</b>    |  |
| · <b>UN proper shipping name</b> | Flammable solids, organic, n.o.s. (4,4`-Azo-bis(4-cyanovaleric Acid))                                |
| · <b>DOT</b>                     | 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (4,4`-Azo-bis(4-cyanovaleric Acid)), ENVIRONMENTALLY HAZARDOUS |
| · <b>ADR</b>                     | FLAMMABLE SOLID, ORGANIC, N.O.S. (4,4`-Azo-bis(4-cyanovaleric Acid)), MARINE POLLUTANT               |
| · <b>IMDG</b>                    | FLAMMABLE SOLID, ORGANIC, N.O.S. (4,4`-Azo-bis(4-cyanovaleric Acid))                                 |
| · <b>IATA</b>                    |  |

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· **Transport hazard class(es)**· **DOT**· **Class**

4.1 Flammable solids, self-reactive substances and solid desensitised explosives

· **Label**

4.1

· **ADR, IMDG**· **Class**

4.1 Flammable solids, self-reactive substances and solid desensitised explosives

· **Label**

4.1

· **IATA**· **Class**

4.1 Flammable solids, self-reactive substances and solid desensitised explosives

· **Label**

4.1

· **Packing group**· **DOT, ADR, IMDG**

II

· **IATA**

Not regulated

· **Environmental hazards:**· **Marine pollutant:**No  
Yes (DOT)

Symbol (fish and tree)

· **Special marking (ADR):**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Flammable solids, self-reactive substances and solid desensitised explosives

· **EMS Number:**

F-A,S-G

· **Stowage Category**

B

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **DOT**· **Quantity limitations**

On passenger aircraft/rail: 15 kg

On cargo aircraft only: 50 kg

· **Remarks:**

Special marking with the symbol (fish and tree).

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· <b>ADR</b> · <b>Excepted quantities (EQ)</b>	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· <b>IMDG</b> · <b>Limited quantities (LQ)</b> · <b>Excepted quantities (EQ)</b>	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· <b>UN "Model Regulation":</b>	UN 1325 FLAMMABLE SOLID, ORGANIC, N.O.S. (4,4'-AZO-BIS(4-CYANOVALERIC ACID)), 4.1, II, ENVIRONMENTALLY HAZARDOUS

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

Substance is not listed.

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

ACTIVE

· **Hazardous Air Pollutants**

Substance is not listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

· **TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

· **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**

GHS02    GHS07

· **Signal word** *Danger*· **Hazard-determining components of labeling:**

4,4'-Azo-bis(4-cyanovaleric Acid)

· **Hazard statements***Flammable solid.**Harmful if swallowed.*· **Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**Rinse mouth.**In case of fire: Use for extinction: CO2, powder or water spray.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing SDS:** Quality Control Dept.· **Contact:**· **Date of preparation / last revision** 03/09/2021 / -· **Abbreviations and acronyms:***Flam. Sol. 1: Flammable solids – Category 1**Acute Tox. 4: Acute toxicity – Category 4*